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Penstemon 'Sweet Joanne'

Dale T. Lindgren
University of Nebraska - Lincoln, dlindgren1@unl.edu

Daniel Schaaf
University of Nebraska-Lincoln

Kim Todd
University of Nebraska-Lincoln, ktodd2@unl.edu

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Dale T. Lindgren[1,4] and Daniel M. Schaaf[2]
University of Nebraska–Lincoln, West Central Research and Extension Center, 402 West State Farm Road, North Platte, NE 69101-7751

Kim Todd[3]
University of Nebraska–Lincoln, Department of Agronomy and Horticulture, 389 Plant Sciences Hall, Lincoln, NE 68583-0724

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Penstemon Mitch. (Plantaginaceae Juss. formerly Scrophulariaceae Juss.) is a diverse genus of ≈271 species that occur throughout the United States (except Hawaii), Canada, Mexico, and Guatemala (Lindgren and Wilde, 2003). Many cultivars have been named (Lindgren, 2006). Although selections from interspecific crosses are less common than intraspecific crosses, many European hybrids have been derived from intercrossing species and hybrids from Mexico with the large-flowered *P. cobaea* Nutt. from the central United States. Most of these large and colorfully flowered European hybrids do not overwinter in the United States except in the milder climates.

Selections from intersectional crosses between the Sect. Fasciculus Keck ex Straw and the Sect. Peltanthera Keck of *Penstemon* have resulted in a group of plants known as the Mexicana complex, which is a hybrid population. This complex displays intermediate characteristics between the parents. In 1980, the first of the Mexicali complex was established by introducing the large-flowered variety called 'Sensation' into the Mexicana complex. Plants from the Mexicali complex are believed to have received their winter-hardiness and long bloom from the *Penstemon* Section Fasciculus and larger flowers from the *Penstemon* Section Peltanthera and the variety 'Sensation' (Meyers, 1998). Meyers produced four Mexicali lines. One line resembled the Section Peltanthera parents, one line resembled the 'Sensation' parent, and two lines resembled the Section Fasciculus parents.

Seeds of the Mexicali complex were distributed to members of the American Penstemon Society (APS) through the APS seed exchange, and the resultant seedlings of some of these Mexicali selections performed well. Red Rocks™, Pikes Peak Purple™, and Shadow Mountain™ are three selections from the Mexicali complex made in Colorado and released through the Plant Select® plants program. Other selections from the Mexicali complex have been made as well (Lindgren, 2006). Some plants in this group possess fascicles. Fascicles are secondary branches that grow out and produce flowers later in the season, which extends the flowering season (Way and James, 1998). New *Penstemon* selections with large flowers, cold-hardiness, longevity, adaptation to a range of growing conditions, and an extended flowering season are needed. 'Sweet Joanne' meets these requirements.

Origin

Seeds of four of the Mexicali lines were obtained from Bruce Meyers in 1988. Samples from each of the lines were planted in field plots at the University of Nebraska–Lincoln (UNL) West Central Research and Extension Center (WCREC) at North Platte, NE. Soil at the site is a Cozad silt loam (fine-silty, mixed, mesic *Fluventic Haplustoll*) with a pH ranging from 7.6 to 7.8. Seeds were collected from the surviving plants of the Mexicali populations, planted in 1991 and 1992, and allowed to intercross. Seeds were again collected from surviving plants in 1994 and their resultant seedlings planted. These seedlings were evaluated for flower size, flower color, length of bloom time, disease susceptibility, and, foremost, winter survival. Ten plants survived for 2 years. These 10 seedlings were vegetatively propagated and evaluated in additional trials. One plant, selected in 1998, with larger flowers and vigorous spring growth and designated as 98002 ('Sweet Joanne') performed well in these initial trials and was selected for further evaluation. In 1999, 40 plants of 'Sweet Joanne' were vegetatively propagated and transplanted to field plots at North Platte, NE. In 2007, all 40 plants were still alive.

Description

The description of 'Sweet Joanne' is based on observations in field plots at the UNL WCREC at North Platte, NE. The color descriptions are based on the Royal Horticultural Society Color Charts and are listed as a color description and corresponding reference number.

Flowers of 'Sweet Joanne' are dark pink–lavender on the outside (purple–violet 81C) fading to pink (purple–violet 84C) near the calyx and are arranged as a thyrse inflorescence. Pubescence can be found on the lower three petal lobes at the mouth of the flower, up to 3 mm long. *Penstemon* flowers sometimes have markings or streaks in the petals, usually known as guidelines, because they are thought to attract pollinators to the nectar sacs at the base of the flower (Way and James, 1998). These streaks are pigmented veins in the petals, which normally occur only on the lower three lobes of the flower and come in a variety of colors, blotches, networks, and patterns. These guidelines can be an attractive and distinguishing feature of a *Penstemon* cultivar. Guidelines in flowers of 'Sweet Joanne' are reddish lavender (red–purple 70A) bands of color with reticulation where they break and join at the mouth in the lower lobes of the throat. They are in contrast to the white inside throat. Guidelines in 'Sweet Joanne' are brightest at the mouth and decrease in intensity toward the back of the throat.

In 2002, individual flowers of 'Sweet Joanne' averaged 2.3 ± 0.15 cm in width, 2.3 ± 0.1 cm in height, and 3.3 ± 0.16 cm in length. In 2003, flowers averaged 2.6 ± 0.08 cm in width, 2.4 ± 0.07 cm in height, and 3.7 ± 0.11 cm in length. In 2004, flowers averaged 2.5 ± 0.12 cm in width, 2.2 ± 0.14 cm in height, and 3.4 ± 0.13 cm in length (Table 1). The number of flowers per stalk averaged 32.6 ± 6.1 in 2003 and 31.3 ± 10.9 in July 2004 in unmulched plantings (Table 1).

The staminode, the sterile stamen found attached to the upper fused petals of a *Penstemon* flower, is curved downward at the tip ending with two distinct small lobes in 'Sweet Joanne'. The staminode of 'Sweet Joanne' averages 18.8 ± 1.6 mm in length and has thick, golden hairs (yellow–orange 22A) at the tip, decreasing in intensity toward the back of the staminode. Anther sacs are opposite, opening across the connection of each stamen. Each unopened anther (red–purple 71A) is ≈2.5 ± 0.02 mm long and 1.2 ± 0.10 mm wide, and opened/dehisced anthers (purple 79A) are 1.6 ± 0.07 mm long and 1.0 ± 0.26 mm wide. Style length averages 25.5 ± 2.3 mm. Pistils average 2.8 ± 0.13 mm in length. Calyx (green 141C) length averages 12.4 ± 0.9 mm. Seed averages 3 ± 0.7 mm wide.

Plant size of 1-year-old and older plants has varied slightly between years. In 2002, height of 1-year-old plants averaged 51.4 ± 5.2 cm, 2-year-old plants averaged 56.2 ± 3.6 cm in 2003, and 3-year-old plants averaged 50.0 ± 3.9 cm in July 2004. Plant width varied from 67.0 ± 6.5 cm in 2002 for 1-year-old plants, 48.8 ± 19.8 cm in 2003 for 2-year-old plants, and 52.6 ± 7.0 cm in 2004 for 3-year-old plants (Table 1). The foliage is a bright green color (green 137B) and stays green through most of December at North Platte, NE. Leaves vary in size with age but are linear in shape, opposite, have serrate margins, minutely pubescent, and are glossy (Table 1). This selection is characterized by fascicles, which extend the flowering season.

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[1]Professor, Horticulture.
[2]Research Technician.
[3]Associate Professor, Agronomy and Horticulture.
[4]To whom reprint requests should be addressed; e-mail dlindgren1@unl.edu.

Table 1. Average growth and flowering traits of 'Sweet Joanne' (mean ± SD, n = 10).

Date	Site	Plant ht (cm)	Plant width (cm)	Number of flowers/stalk	Flower (cm)			Range of leaf size (mm)	
					Width	Ht	Length	Length	Width
8 Oct. 2002	North Platte	51.4 ± 5.2	67.0 ± 6.5	—	2.3 ± 0.15	2.3 ± 0.1	3.3 ± 0.16	—	—
16 June 2003	North Platte	56.2 ± 3.6	48.8 ± 9.8	32.6 ± 6.1	2.6 ± 0.08	2.4 ± 0.07	3.7 ± 0.11	45–99	5–16
7 July 2004	North Platte	50.0 ± 3.9	52.6 ± 7.0	31.3 ± 10.9	2.5 ± 0.12	2.2 ± 0.14	3.4 ± 0.13	41–81	6–16
20 July 2004	North Platte (mulched)	53.7 ± 3.3	69.0 ± 3.2	21.0 ± 7.3	2.5 ± 0.09	2.2 ± 0.08	3.5 ± 0.01	38–70	4–17

Table 2. Comparison of 'Sweet Joanne', Red Rocks™, and Pikes Peak Purple™ for flower size (mm) and flower color in 2004 (mean ± SD, n = 10).

Cultivar	Flower width (mm)	Flower ht (mm)	Flower length (mm)	Flower color[z]
'Sweet Joanne'	25.0 ± 1.2 a[y]	22.4 ± 1.4 a	33.5 ± 1.3 a	Purple–violet 81C
Red Rocks™	21.7 ± 1.6 b	20.2 ± 1.4 b	28.8 ± 0.9 b	Purple 77A
Pikes Peak Purple™	18.8 ± 1.2 b	18.7 ± 0.7 c	28.0 ± 0.8 b	Red–purple 58B

[z]Based on Royal Horticulture Society Color Charts.
[y]Values followed by a common letter, within a column, are not significantly different ($P \leq 0.05$).

Flowering of first-year plants began on 19 July in 1999, 25 June in 2001, and 2 July in 2003. One-year-old plants began flowering on 31 May in 2000, 4 June in 2003, and 1 June in 2004. In all years, flowering continued, although at a reduced intensity, until the first fall hard frost. Plants that do not undergo extreme drought stress will flower moderately well all summer long.

Along with its hardiness, *Penstemon* selection 'Sweet Joanne' has been extremely tolerant/resistant to pests. No insect injury of this selection has been detected in field plantings. However, thrips and spider mites have occasionally been found on this selection in the greenhouse. Diseases have been rare. In 2002, a severe rust infection occurred in the *Penstemon* field plots at North Platte, NE, weakening many selections. However, no rust was detected on 'Sweet Joanne'.

The flower sizes of 'Sweet Joanne', Red Rocks™, and Pikes Peak Purple™ are compared in Table 2. For all dimensions, the flower size of 'Sweet Joanne' is larger than for Red Rocks™ and Pikes Peak Purple™. The flower color of 'Sweet Joanne' is purple–violet 81C, the flower color of Pikes Peak Purple™ is purple 77A, and the flower color of Red Rocks™ is red–purple 58B. Plants of 'Sweet Joanne' at North Platte form a tighter, upright plant compared with Red Rocks™ and Pikes Peak Purple™, which tend to have a more open and sprawly form. However, all three selections are approximately the same height. *Penstemon* 'Sweet Joanne' has received very favorable observational ratings in eastern Nebraska, Iowa, Wisconsin, Michigan, and Pennsylvania. The name 'Sweet Joanne' was selected to honor the breeder's wife, Joanne Lindgren, who patiently tolerated plant trips and professional meetings for 30 years.

Penstemon 'Sweet Joanne' is propagated asexually from softwood cuttings. Plants do not consistently breed true from seed, especially for hardiness.

Recommendations

'Sweet Joanne' is recommended for landscape use because of its winter-hardiness, repeat flowering, large attractive flowers, bright green glossy foliage, and attractive plant habit from May to November. It performs best in locations with 6 to 8 h of full sun. Pruning back the older stalks that have completed flowering will encourage repeat flowering. 'Sweet Joanne' can be used for its medium height as either a border or accent plant. The lavender–pink flowers complement other colors found in the garden.

Availability

'Sweet Joanne' has been licensed to Blooms of Bressingham, P.O. Box 660872, Sacramento, CA 95866-0872. The U.S. patent application number for 'Sweet Joanne' is 11/823,164. Contact Blooms of Bressingham for information about obtaining this plant.

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